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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,405	09/16/2003	Kouichi Fukuda	HITA.0433	9675
38327	7590	10/10/2007		
REED SMITH LLP 3110 FAIRVIEW PARK DRIVE, SUITE 1400 FALLS CHURCH, VA 22042				
			EXAMINER CALEY, MICHAEL H	
			ART UNIT 2871	PAPER NUMBER
			MAIL DATE 10/10/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/662,405

Applicant(s)

FUKUDA ET AL.

Examiner

Michael H. Caley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 8/9/07.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/9/07 has been entered.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claims 1-5 and 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Higuchi (U.S. Patent No. 6,827,460) in view of Masaki et al. (U.S. Patent Application Publication No. 2002/0033915 "Masaki").**

Regarding claim 1, Higuchi discloses a liquid crystal display device having:

a transmissive type liquid crystal display panel (Figure 1 element 21) which sandwiches a liquid crystal layer (Column 4 line 53) between a pair of substrates (22 and 23); and

a backlight (31) arranged at a back face of the liquid crystal display panel and having a light source (37) and a reflector (36), wherein the liquid crystal display device is capable of performing as a transmissive display which uses light from the light source and as a reflective display which uses external light incident from a front face side of the liquid crystal display panel by reflecting the external light on the reflector (Column 8 lines 4-64),

further comprising a polarizer (25) arranged between the back-face-side substrate of the pair of substrates and the backlight, the polarizer being formed to absorb polarized light having a predetermined polarization direction, and

a light diffusion layer (41) arranged between the back-face-side substrate out of the pair of substrates and the reflector of the backlight.

Higuchi fails to disclose the light diffuser as including a first diffusion layer, a second diffusion layer, and a prism sheet arranged between the first diffusion layer and the second diffusion layer arranged between the back-face-side substrate out of the pair of substrates and the

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reflector of the backlight, and further, is silent on the specific material or structure of the light diffusion plate. Masaki, however, teaches a light diffuser located between the back-face-side substrate (Figure 4 element 32) and the reflector of the backlight (Figure 4 element 24) including a first diffusion layer (Figure 4 element 25), a second diffusion layer (Figure 4 element 10), and a prism sheet (Figure 4 element 40) arranged between the first diffusion layer and the second diffusion layer. Masaki teaches the light source arrangement for a liquid crystal display (Figure 4 element 20) optimized to have a high luminance (Page 4 Table 1), excellent light diffusing property (Page 1 [0006]), and high resistance to scratching (Page 4 [0073]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the light diffuser disclosed by Higuchi to have the light diffuser configuration taught by Masaki. One would have been motivated to construct the light diffusion plate disclosed by Higuchi according to the teachings of Masaki to benefit from a high luminance, excellent light diffusion property, and high resistance to damage (Page 4 Table 1, [0073], Page 1 [0006]).

Regarding claims 2-4 and 13, Higuchi fails to disclose at least one of the light diffusion layers as constituted of a diffusion plate, diffusion sheet, diffusion tacky adhesive material, or a diffusion film. Masaki, however, teaches at least one of the diffusion layers as constituting each of a diffusion plate or sheet (Page 4 [0070]), a diffusion tacky adhesive material (Page 2 [0050]), and a diffusion film (Page 4 [0070]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed a light diffusion layer to constitute any of a diffusion plate or sheet, a

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diffusion tacky adhesive material, or a diffusion film such as in the light diffusion plate taught by Masaki. One would have been motivated to construct the light diffusion plate disclosed by Higuchi according to the teachings of Masaki to benefit from a high luminance, excellent light diffusion property, and high resistance to damage (Page 4 Table 1, [0073], Page 1 [0006]).

Regarding claim 5, Higuchi as modified by Masaki discloses a light guide body (32) which is arranged at a back face side of the liquid crystal display panel and on which light from the light source is incident.

**Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Higuchi in view of Masaki and in further view of Kuroiwa et al. (U.S. Patent No. 6,317,180 "Kuroiwa").**

Higuchi as modified by Masaki discloses the polarizer as being arranged between the back-face-side substrate of the pair of substrates and the light guide body and at least one of the light diffusion layers as being arranged at a side of the polarizer where the light guide body is positioned (Figure 1). Higuchi fails to disclose the light diffusion layer as on a surface of the polarizer. Kuroiwa, however, teaches the light diffusion layer as on a surface of the polarizer (Figure 1 elements 140 and 150; Column 5 lines 47-50).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the light diffusion layer on a surface of the polarizer. One would have been motivated to form the light diffusion layer on the surface of the polarizer to eliminate any

gap between the devices (Column 5 lines 47-50) for reasons such as to seal the space from dust and to reduce the thickness of the display.

**Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Higuchi in view of Masaki and in further view of Satoh et al. (U.S. Patent No. 5,847,795 "Satoh").**

Higuchi fails to disclose the polarizer as provided with an antiglare layer that acts as the light diffusion layer. Higuchi discloses the diffusion layer as positioned adjacent to the polarizer, but does not disclose an antiglare property of the diffusion layer. Satoh teaches an antiglare layer provided on the polarizer, which acts as a light diffusion layer (Figure 3 elements 11a-11c).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide an antiglare layer on the polarizer or configure the diffusion layer on the polarizer as an antiglare layer. One would have been motivated to provide such an antiglare function as a means of improving clarity of the displayed image by reducing stray reflections of external light (Satoh, Column 5 lines 15-44).

**Claims 1 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ouderkirk et al. (U.S. Patent No. 6,804,058 "Ouderkirk") in view of Masaki.**

Ouderkirk discloses a liquid crystal display device having:

a transmissive type liquid crystal display panel (Figure 10 element 141) which sandwiches a liquid crystal layer between a pair of substrates; and

a backlight (140) arranged at a back face of the liquid crystal display panel and having a light source (172) and a reflector (175), wherein the liquid crystal display device

is capable of performing as a transmissive display which uses light from the light source and as a reflective display which uses external light incident from a front face side of the liquid crystal display panel by reflecting the external light on the reflector,

further comprising a polarizer (150) arranged between the back-face-side substrate of the pair of substrates and the backlight, the polarizer being formed to absorb polarized light having a predetermined polarization direction, and

a light diffusion layer (113) arranged between the back-face-side substrate out of the pair of substrates and the reflector of the backlight.

Ouderkirk fails to disclose the light diffuser as including a first diffusion layer, a second diffusion layer, and a prism sheet arranged between the first diffusion layer and the second diffusion layer arranged between the back-face-side substrate out of the pair of substrates and the reflector of the backlight, and further, is silent on the specific material or structure of the light diffusion plate. Masaki, however, teaches a light diffuser located between the back-face-side substrate (Figure 4 element 32) and the reflector of the backlight (Figure 4 element 24) including a first diffusion layer (Figure 4 element 25), a second diffusion layer (Figure 4 element 10), and a prism sheet (Figure 4 element 40) arranged between the first diffusion layer and the second diffusion layer. Masaki teaches the light source arrangement for a liquid crystal display (Figure 4 element 20) optimized to have a high luminance (Page 4 Table 1), excellent light diffusing property (Page 1 [0006]), and high resistance to scratching (Page 4 [0073]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the light diffuser disclosed by Ouderkirk to have the light diffuser



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configuration taught by Masaki. One would have been motivated to construct the light diffusion plate disclosed by Ouderkirk according to the teachings of Masaki to benefit from a high luminance, excellent light diffusion property, and high resistance to damage (Page 4 Table 1, [0073], Page 1 [0006]).

Regarding claims 10 and 11, Ouderkirk as modified by Masaki discloses the polarizer as being arranged between the back-face-side substrate of the pair of substrates and the light guide body, a reflection polarizer as arranged between the polarizer and the light guide body, and the light diffusion layer as being arranged between the polarizer and the reflection polarizer (Figure 10).

Regarding claim 12, Ouderkirk as modified by Masaki discloses at least one of the light diffusion layers as being arranged between the back-face-side substrate and the polarizer, and at least one of the light diffusion layers as being arranged between the polarizer and the reflection polarizer (Figure 10).

***Allowable Subject Matter***

Claims 6 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

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The cited prior art discloses the liquid crystal display, light source, reflector, polarizer and diffuser arrangement as proposed in claim 5 in which the light diffusion layer is arranged between the polarizer and light source (Higuchi: Figure 1; Ouderkirk: Figure 10). The prior art fails to disclose such an arrangement in which the light diffusion layer or diffusion tacky adhesive is arranged between the back-face-side substrate and the polarizer.

### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael H. Caley whose telephone number is (571) 272-2286. The examiner can normally be reached on M-F 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Nelms can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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A handwritten signature in black ink, appearing to read "Michael H. Caley". The signature is fluid and cursive, with the first name "Michael" and last name "Caley" being more distinct than the middle initial "H".

Michael H. Caley  
September 2007